AMBLER AIRPORT DUST SUPPRESSION PROJECT # 61021 Ambler, Alaska

November 26, 2008



Prepared for:

Alaska Department of Transportation & Public Facilities

Prepared by:

Association with:



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TABLE OF CONTENTS

1.0	Executive Summary	1
2.0	Background	1
3.0	Scope of Work	4
4.0	Methodology	4
5.0	Limitations	5
6.0	Field Activities	. 6
7.0	Sample Results	. 7
8.0	Analysis	. 7
9.0	Conclusions and Recommendations	. 9
10.0	Signatures of Environmental Professionals	. 9

APPENDICES

Appendix A: Data Tables

Table 1: Asbestos Personal Breathing Zone Sample Results

Table 2: Asbestos Area Sample Results

Appendix B: Sample Locations Drawing

Figure 1: Vicinity Map Figure 2: Site Map

Figure 3: Sample Location Map

Appendix C: Photo Log

Appendix D: Laboratory Results



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1.0 **Executive Summary**

This report has been completed by NORTECH Environmental Engineering, Health & Safety (NORTECH) for the Alaska Department of Transportation and Public Facilities (ADOT&PF) as a sub-consultant for R&M Consultants (R&M) under the Statewide Hazardous Waste & Environmental Services Term Agreement - 2008; RFP #4.

Ambler, Alaska has had a known Naturally Occurring Asbestos (NOA) issue since 2003 when it was found to be present in the gravel quarry. The NOA-containing gravel has been used on Ambler's road systems, runway and on numerous other local projects. Several efforts have been made by state and federal agencies in determining the extent of the NOA, alternative gravel sources and the potential health and safety concerns for the residents of Ambler.

The greatest potential for asbestos exposure exists during activities involving NOA gravel which create visible dust. Planes landing/taking off from Ambler are a daily occurrence which can create a substantial amount of visible dust. ADOT&PF is aware of the NOA concern in Ambler, and has taken steps in order to reduce the risk of asbestos exposure near the runway. For landing safety the runway needed to be regraded, which required additional gravel; however, the only gravel source available was the NOA-containing gravel from the local NANA Corporation quarry. It was determined the gravel from the quarry could be used to repair the runway if work practice controls were put in place to control potential worker exposure. The project work plan developed and implemented included worker training as well as monitoring and oversight to document results achieved. In addition to the runway repair, a dust suppressing palliative was applied to portions of the runway, apron and road into Ambler.

Following worker asbestos awareness training the runway was repaired utilizing modified work practices, wet methods and NOA-containing aggregate. Exposure monitoring documented negative exposure assessments (NEA) for each sub-task monitored, including aggregate extraction, loading, transport and placement as well as runway grading, watering and palliative application.

The scope of work completed was in accordance with NORTECH'S July, 2008 proposal, work plan, and fee estimate.

2.0 Background

Asbestos is a magnesium silicate mineral fiber that was mined and used extensively in a variety of building construction materials for insulation and as a fire-retardant. Inhalation exposures to airborne asbestos fibers have been linked to lung cancer,





asbestosis and mesothelioma. The US Environmental Protection Agency and Consumer Protection Safety Commission have effectively banned the majority of asbestos products; however, building materials with asbestos containing materials (ACM) are still available at US retail stores.

The incidence and concentration of naturally occurring asbestos in aggregates and soils is based on the geology of a specific area. The US Geological Survey conducts ongoing monitoring of historical asbestos mines, former asbestos exploration prospects and natural asbestos occurrences in rocks and soil. Natural weathering and human activities, such as the mining and use of NOA-containing rocks and soils, have the potential to release airborne asbestos fibers into the environment.

Ambler Alaska is located approximately 45 miles north of the Arctic Circle, on the north bank of the Kobuk River, near the confluence of the Ambler River. In 2003 bulk gravel samples from a source used to construct the community airport, roads and utility systems were determined to be contaminated with Chyrsotile NOA at variable concentrations as high as 10%. These findings resulted in indefinite delays of public funding of airport, road and utility projects that jeopardized the community's public health systems and impacted the local economy.

Alaska Department of Labor and Workforce Development (ADOL) and Occupational Safety & Health Labor Standards and Safety Division (AKOSH) performed a limited health survey in 2003 which recommended mandatory footwear cleaning before entering buildings, HEPA vacuuming and covering existing site surfaces. In June 2007, the Agency for Toxic Substances and Disease Registry (ATSDR) released a community exposure assessment, following an investigation requested by the Manilag Association. The ATSDR community exposure investigation focused on whether all terrain vehicle (ATV) use on the Ambler gravel roads could lead to significant asbestos exposures for riders and pedestrians along the side of the road. The summer ATV exposure investigation found dust and asbestos exposure levels of health concern when exposed to visible airborne dust clouds caused by ATV traffic. However, ambient reference sampling in the community indicated airborne asbestos at a level of risk not likely to be a health concern. The ATSDR report recommended that access to the Ambler gravel quarry be closed, a community educational program be implemented and short and long term solutions for the road dust and potentially contaminated surface soil be developed and implemented.

The following public health assessments have been completed.

Public Health Evaluation and Assessment - Interim Report. May 20, 2005. Middaugh, John P. and Arnold, Scott. Asbestos Exposure - Ambler. Alaska Division of Public Health.



- Medical records review for residents of Ambler, Kobuk, Shungnak and Kiana, to see if asbestos-related diseases had occurred
- o No asbestos-related diagnoses on death certificate; no mesothelioma cases dating back to 1970
- o On review of chest X-ray, nine people with pleural plaques suspicious for asbestos exposure
- Investigation of Possible Environmental Asbestos Exposure in Northwest Alaska, 2004-2005. Chimonas, Marc, Middaugh, John and Arnold, Scott. -Interim Report. June 15, 2005. Alaska Division of Public Health.
 - Expert review of 130 chest X-rays from villagers 50 and older; interviews conducted
 - Twenty-one individuals with either pleural plaques or pulmonary fibrosis suspicious for asbestos exposure. Some were exposed to asbestos occupationally.
 - Not possible to definitively establish or exclude environmental asbestos exposure as a cause of disease

As part of a current water and sewer improvement project in Ambler, the Alaska Native Tribal Health Consortium (ANTHC) funded an Environmental Assessment (EA) related to the utilization of NOA aggregate. A modified work plan was developed and initial exposure assessments were completed that documented negative exposure assessments (NEA) for the standardized tasks involved with the utility project. The EA study is currently being finalized, preliminary drafts and contacts with the author and ANTHC have indicated that recommendations will include modified work practices employing routine watering during dry project efforts as well as the application of palliatives to control visible dust and NOA exposure.

In April and August 2008, NORTECH traveled to Ambler to perform winter and summer assessment of Federal Aviation Administration (FAA) work practices and facilities located adjacent to the runway. The winter sampling effort did not include exterior area samples due to the snow/moisture present on the runway and apron. The winter and summer sampling results documented that routine FAA maintenance activities did result in airborne asbestos fiber concentrations above the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) of 0.1 fibers per cubic centimeter (f/cc); even though a substantial amount of asbestos structures were identified in settled dust/dirt in the FAA facilities. Increasing custodial activities to routinely remove visible dust was recommended.

In preparation for the runway repair in July 2008, a NOA public hearing was held in Ambler that all residents were encouraged to attend. Several Federal, State, Local and private entities were involved with presentations. These included Village of Ambler, ADOT&PF, NANA, Northwest Arctic Borough and NORTECH. The public hearing was



undertaken to update the village residents regarding ADOT&PF's efforts to locate "clean" gravel sources and the planned maintenance project to repair the runway with the application of a dust palliative to control airborne exposure. Another topic addressed in some detail during the meeting was public health concerns and providing recommendations regarding steps Ambler residents can take in order to reduce the risk of potential asbestos exposure.

3.0 Scope of Work

The ADOT&PF intended to address control of airborne NOA as well as general dust on the Ambler Airport's main runway during repairs, application of a dust palliative agent (Durasoil) and subsequent runway use. As further detailed in NORTECH's July 2008 proposal and fee estimate, the ADOT&PF-requested scope of work included:

- Review and provide assistance in the finalization of the ADOT&PF's proposed work plan and staff training to repair the runway and apply the palliative agent while controlling dust and asbestos fiber release.
- Attendance by a NOA knowledgeable and experienced Certified Industrial Hygienist (CIH) at a public meeting in Ambler to assist the ADOT&PF's representative in informing the citizens and community of project details and answering any health related questions.
- Provide oversight and complete activity-based exposure monitoring during palliative application to ensure worker exposure is compliant with the OSHA permissible exposure levels (PEL) for dust and asbestos.

4.0 Methodology

All field oversight and sampling was completed by an experienced Environmental Specialist with state of Alaska current supervisor certification, EPA asbestos inspector and NIOSH 582 certifications. Field work, sample analysis and preparation of this report was overseen and reviewed by a CIH.

The personnel air samples were collected and analyzed according to the mandatory Appendix A of 29 CFR 1910.1001 Asbestos. Breathing zone samples were collected for all tasks associated with the runway repair and palliative application. The pumps were calibrated prior to and immediately following each sampling period. The cassette cowls were positioned near the technician's shirt collar, with the inlet downward to avoid gross contamination. Workers were instructed to avoid knocking the cassette, which could potentially dislodge the sample. The workers were monitored throughout the day to ensure pumps were operating correctly.



Area air samples were collected at a higher flow rate, to assess potential ambient airborne concentrations of asbestos fibers, while project work activities were occurring. The sampling methods prescribed in Appendix A of 29 CFR 1910 1001 Asbestos were utilized.

All samples were analyzed by EHS Laboratories, Inc., a NVLAP certified laboratory. according to NIOSH Method 7400. The required sampling method for potential occupational exposures is described in Appendix A of 29 CFR 1910.1001 Asbestos. The laboratory analysis utilizes phase contrast microscopy (PCM). At the client's discretion, asbestos air samples may also be analyzed by transmission electron microscopy (TEM), according to 40 CFR Part 763, Appendix A to Subpart E, the US Environmental Protection Agency abatement containment clearance criteria. TEM provides much higher microscopic resolution and is utilized to identify smaller diameter asbestos fibers.

Prior to the start of the project, all workers attended 2-hour Asbestos Awareness Training presented by NORTECH's CIH. This course meets EPA training requirements under AHERA 40 CFR 763.92(a)(2)(I) for school custodial and maintenance personnel and OSHA training requirements 29 CFR 1926.1101 (k)(9) for Class IV work.

5.0 Limitations

NORTECH provides consulting services that are performed with the standard of care and competence found within the industrial hygiene practice and the environmental engineering profession. It should be recognized that there are limitations to any occupational exposure assessment. The data presented in this report should be considered representative of the work practices monitored at the time of the assessment. Changes in exposure levels can and will occur with time, due to natural processes, work activities and/or human activities. NORTECH has performed the work, developed the associated findings and proposed the recommendations described in this report using accepted practice and technology available at the time the assessment was conducted.

NORTECH has based its conclusions and recommendations on the Firm's current understanding of laws, agency regulations and consensus standards. The regulations and professional consensus standards are constantly changing including the agency interpretations. If changes in the regulations, standards or the agency interpretations occur, NORTECH reserves the right to amend or revise the conclusions and/or recommendations in this report.



November 26, 2008

6.0 **Field Activities**

On August 4, 2008, NORTECH's staff of a CIH and Environmental Specialist arrived at Ambler. A crew of three workers was scheduled to perform the runway repair and palliative application, all requiring Asbestos Awareness Training. NORTECH met the crew, discussed the work plan and began the Asbestos Awareness Training. After the training was complete, the crew began mobilizing equipment to the airport.

The first project task was repairing the runway and reestablishing the crown. This required the runway to be graded while adding several loads of gravel. The crew foreman operated the grader while the other workers operated the gravel truck and loader. The loading, grading and gravel hauling operations occurred simultaneously, with the grader leveling out the new gravel, as well as grading the entire width of the runway. Eleven loads of gravel aggregate or 110 cubic yards (approximately 10 cubic vards per load) were excavated, loaded, transported, placed and spread on the main runway.

Ambler had received several days of rain prior to the project start, leaving the runway. roads and quarry wet. No visible dust emissions were observed during grading, loading, driving or plane take off/landings the first day onsite.

Grading and gravel hauling continued the following day (August 5, 2008). Weather conditions changed to warm and sunny allowing the runway and road systems to dry. Visible dust was observed from planes prop wash in the late morning and behind the gravel truck by late-afternoon. The gravel in the quarry remained very moist however. and no visible dust emissions were observed during loading or grading. Thirty-four loads (approximately 340 cubic yards) of gravel aggregate were spread on the runway on this day.

On August 6, the crew began spreading gravel and grading on the runway apron. By afternoon, the runway and apron were conditioned to begin applying water. Water was applied to increase the effectiveness of compacting and of the palliative. Workers utilized 275-gallon totes installed in the dump truck to apply the water via a gravity feed system. After the water was applied, the crew used an additional truck to pull a compacter over the runway and apron. An additional four loads (approximately 40 cubic yards) of aggregate were spread on the runway and apron.

On August 7, the crew continued to apply water and began compacting the runway and apron. Small amounts of visible dust were observed during watering and compacting. An additional ADOT&PF worker arrived in the afternoon that had applied the dust palliative to several other runways in the region, and was familiar with the application



process and equipment. The additional ADOT&PF worker continued grading the edges of the runway, apron and the airport road into Ambler. Two workers applied water, while the crew foreman proceeded with compacting the runway and apron.

The crew began applying the palliative on August 8. The Kotzebue ADOT&PF maintenance supervisor arrived in the morning with an electrician to install a motor on the compacter. The motor turned a counterweight inside the compacter, thus increasing efficiency. The crew continued palliative application and compacting throughout the day. By the end of the day the palliative had been applied over the main runway, apron and approximately 0.5 miles down the airport road towards Ambler.

On August 9, the crew returned to continue compacting the area where palliative had been applied, as well as perform miscellaneous maintenance activities at the airport. NORTECH did not perform air monitoring on this day since the project scope had been completed.

7.0 Sample Results

The summary of asbestos personal breathing zone sample results, including Time Weighted Averages, is presented in Table 1 of Appendix A. A total of 70 breathing zone samples were collected of the following work tasks

- Loader Operator
- Truck Driver
- Grader Operator
- Laborer
- Oversight

A summary of the asbestos area air sample results in presented in Table 2 of Appendix A. A total of 36 asbestos area samples were collected. All area air samples reported area air concentrations less than the 0.01 fibers/cc AHERA clearance concentration. Area sample locations can be found in Figure 4 of Appendix B.

8.0 **Analysis**

OSHA's PEL for asbestosis 0.1 f/cc as an eight-hour time weighted average. The OSHA excursion limit is 1.0 f/cc collected over a 30-minute period. Due to extended work shifts, NORTECH also calculated the "actual" TWA for each worker which illustrates the fiber concentration exposure based upon hours worked. None of the personnel samples collected for any of the sub-tasks monitored approached the PEL or excursion limit for asbestos, when analyzed according to NIOSH Method 7400. The



results represent a negative exposure assessment (NEA) for each of the sub-tasks monitored. The results of the NEA documented AKOSH compliance and are valid for next year for the same crew doing the same work under the same conditions.

Personal samples were collected from workers during all tasks associated with the runway repair and palliative application. Workers directly impacted the NOA gravel source by loading, dumping, spreading, grading, driving and compacting activities. The gravel source was observed to be moist for the duration of the project, and workers limited activities which created excess dust. Forty-nine loads of gravel were used to repair the runway and apron at approximately 10 yd3/load totaling four-hundred ninety cubic yards of gravel.

The Asbestos Hazard Emergency Response Act (AHERA) has set the asbestos clearance level at 0.01 f/cc via PCM analysis. All but one area samples collected were found to have asbestos concentrations below the method detection limit of 0.005 f/cc. one/half the clearance level. The area sample collected with a detectable fiber concentration was found to have 0.006 f/cc; well below the clearance concentration. Engineering controls, such as keeping material adequately wet during handling, were incorporated with the assistance of natural weather processes. However, had the runway and quarry material been dry at the project start, additional water would have been added to reduce dust levels.

Area sample results illustrate working with the NOA gravel source can be performed without exposing workers above the OSHA PEL and/or elevating asbestos fiber concentrations in the area the work is being performed. Many of the area samples were running while planes landed, taxied and took off from the airport. These activities were observed to create the most dust; however, with the application of the palliative visible dust levels during these activities has decreased.

Sample results suggest with proper controls installed, the known NOA gravel quarry can be utilized as a gravel source for local maintenance and project needs with limited health and safety concerns regarding asbestos exposure to workers. NORTECH did observe visible asbestos mineral rock in the quarry reinforcing the decision for the quarry to remain closed to the general public. It is likely NOA is not present in all areas of the quarry; at least in homogenous concentrations, and a mapping effort is recommended to allow future gravel work to utilize areas of the quarry where low/no concentrations of NOA were found.

Asbestos can pose serious health concerns, and if future work occurs using gravel from the quarry, controls similar to those utilized in this project should be installed. It is recommended that workers scheduled to perform extended or continuous tasks involving NOA aggregate should have a minimum of the 2-hour Asbestos Awareness



Training, and should be entered into a medical surveillance program conforming to 29 CFR 1926.1101 subpart Z Medical surveillance guidelines for asbestos.

The palliative application process did not result in high dust levels or high fiber concentrations per sample analysis. Thirty loads of water, at 1,100 gallons/load totaling 33,000 gallons were placed on the runway, apron and road prior to the palliative application. The main runway (North/South) had the palliative product placed over the entire length and functional width. A total of fourteen totes of palliative was applied at two hundred and seventy-five gallons/tote totaling 3,850 gallons of palliative.

9.0 Conclusions and Recommendations

NORTECH provided project oversight and air monitoring for the duration of the runway repair and palliative application project and has developed the following conclusions:

- Negative Exposure Assessments (NEAs) documenting AKOSH compliance for asbestos was documented for all sub-tasks associated with the Ambler runway repair utilizing NOA aggregate and during palliative application.
- The dust control palliative was successfully applied to the full length and functional width of the main runway, apron and approximately 0.5 miles down the airport road towards Ambler
 - Forty-eight (49) loads or approximately 490 cubic yards of NOA aggregate was used
 - o 33,000 gallons of water was applied.

The following recommendations are provided:

- Employ training, medical surveillance program, wet methods and no visible emissions criteria with NOA aggregate use in the future.
- The NANA local gravel quarry with NOA should remain restricted
 - Perform additional sampling in the quarry to characterize and identify areas with highest/lowest NOA concentrations

Signatures of Environmental Professionals

Mr. Aaron Winterfeld, Environmental Specialist for NORTECH and Field Project Manager. Mr. Winterfeld has completed various hazardous materials investigations providing professional field screening and sampling. Mr. Winterfeld is a qualified ADEC field sampler, an AHERA Certified Inspector and HAZWOPER certified.

Mr. Hargesheimer, PE, CIH is the owner and Principal-In-Charge of NORTECH, Inc. Mr. Hargesheimer is a Certified Industrial Hygienist (ABIH#7343), licensed Civil



Engineer (CE 4703), and a registered Environmental Engineer (#92-20026). He has over thirty years of seasoned Alaskan Civil/Environmental engineering and Industrial Hygiene experience, encompassing industry, regulatory and consulting services. Mr. Hargesheimer has managed or reviewed all of NORTECH's more than twenty-five years of project experience including RCRA hazardous materials inspections, abatement design and project monitoring, contaminated site investigation/remediation, NEPA environmental assessments, ASTM property transfer, human health risk assessments, occupational exposure monitoring, indoor air quality and noise. He maintains current EPA accreditation for lead and asbestos inspections, abatement design, risk assessment and project monitoring.

Sincerely,

Aaron Winterfeld

Environmental Specialist

John Hargesheimer, PE, CIH

Principal in Charge

10

Appendix A



ENVIRONMENTAL ENGINEERING, HEALTH & SAFETY
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Com 70ng Table 1: Asbestos Personal Breathing

				con characteristic Campie Negality	ne dampie n	Conico	more the second second second	
1	Date	Sample #	Sample Type ^{3,4}	Task	Fibers/Fields	Fiber Concentration (F/cc) ¹	8-hour TWA2	Actua TWA ²
1		BZ-01	BRE	Oversight	6.5/100	0.008		
1	8/4/08	BZ-05	BRE	Oversight	2.5/100	<0.013	<0.009	<0.014
		BZ-10	STEL	Oversight	4.0/100	>0.066		
		BZ-02	BRE	Loader Operator	15.0/100	0.20		
	8/4/08	BZ-06	BRE	Loader Operator	21.0/100	0.037		
ļ	5	BZ-09	STEL	Loader Operator	10.5/100	0.11	0.024	0.034
		BZ-13	BRE	Hand Pick Rocks	11.0/100	0.043		
		70.20	9					
	8/4/08	BZ-04	BKE	Gravel Truck Driver	8.5/100	0.014	000	0
		BZ-08	BRE	Gravel Truck Driver	9.5/100	0.026	0.009	0.019
		20.50	4			2//17/		
		BZ-03	BRE	Grader Operator	Void*	Void*		
į	8/4/08	BZ-07	STEL	Grader Operator	10.0/100	0.013	,	1
J		BZ-111	BRE	Grader Operator	3.5/100	<0.074		<0.022
		BZ-12	BRE	Hand Pick Rocks	1.5/100	<0.037		
		71.60						
		91-79	BRE	Oversight	4.5/100	<0.008		
1	8/2/08	BZ-18	STEL	Oversight	4.0/100	<0.066	0	
•		BZ-22	BRE	Oversight	9.0/100	0.008	<0.014	<0.011
		BZ-26	BRE	Oversight	8.5/100	0.011		
1	I	BZ-14	BRE	Loader Operator	32.0/100	0.034		
1	8/2/08	BZ-20	STEL	Loader Operator	5.5/100	<0.059		
)	BZ-23	BRE	Loader Operator	21.5/100	0.017	<0.031	<0.024
			BRE	Loader Operator	16 0/100	0.010		
'Fibers per cubic centimeter of air	timeter of a	ir 2 Time Meighted Aver	100 V 10000 3 D.D.T.	۵	200	71200		

Fibers per cubic centimeter of air ² Time Weighted Average ³ BRE – Breathing Zone ⁴ STEL – Short Term Excursion Limit

* Cassette detached from pump during sampling





ADOT&PF Ambler Airport Repair and Dust Suppression Asbestos Breathing Zone Sample Analysis November 26, 2008

Sample Type ^{3,4}
BRE
STEL
BRE
BRE
STEL
BRE
BRE
BRE
BRE
STEL
BRE
BRE
BRE
STEL
BRE
RRE
STEL
BRE
BRE
BRE
STEL
BRE

¹ Fibers per cubic centimeter of air ² Time Weighted Average ³ BRE – Breathing Zone ⁴ STEL – Short Term Excursion Limit





ADOT&PF Ambler Airport Repair and Dust Suppression Asbestos Breathing Zone Sample Analysis November 26, 2008

BRE Oversight 2.5/100 BRE Oversight 7.5/100 STEL Oversight 7.5/100 BRE Oversight 7.5/100 BRE Pump Water – Back of Truck 33.0/100 BRE Pump Water – Back of Truck 35.0/100 STEL Pump Water – Back of Truck 24.5/100 BRE Operate Compactor 13.0/100 BRE Operate Compactor 0.0/100 BRE Water Truck Driver 13.0/100 BRE Water Truck Driver 5.0/100 BRE Water Truck Driver 5.0/100 BRE Water Truck Driver 5.0/100 BRE Oversight 11.5/100 STEL Oversight 5.0/100 BRE Oversight 17.0/100 BRE Apply Palliative 2.5/100 BRE Apply Palliative 2.5/100		Date Sample#	Sample Type ^{3, 4}	Task	Fibers/Fields	Fiber Concentration (F/cc) ¹	8-hour TWA ²	Actual TWA2
St.7/08 BZ-50 BRE Oversight 17.5/100 0.025 Co.017		BZ-44	BRE	Oversight	2.5/100	<0.014		
BZ-55 STEL Oversight 7.5/100 0.026			BRE	Oversight	17.5/100	0.025	, ,	0
BZ-45 BRE Pump Water - Back of Truck 33.0/100 0.026 BZ-48 BRE Pump Water - Back of Truck 35.0/100 0.029 BZ-48 BRE Pump Water - Back of Truck 35.0/100 0.029 BZ-52 STEL Pump Water - Back of Truck 35.0/100 0.029 BZ-56 BRE Pump Water - Back of Truck 24.5/100 0.071 BZ-46 BRE Operate Compactor 0.0/100 0.010 BZ-47 BRE Operate Compactor 0.0/100 0.010 BZ-49 BRE Water Truck Driver 13.0/100 0.012 BZ-54 STEL Water Truck Driver 5.0/100 0.019 BZ-54 STEL Water Truck Driver 5.0/100 0.010 BZ-55 BRE Oversight 11.5/100 0.016 BZ-56 BRE Oversight 17.0/100 0.016 BZ-67 BRE Oversight 17.0/100 0.016 BZ-67 BRE Apply Palliative 18.5/100 0.016 BZ-68 BRE Apply Palliative 19.0/100 0.015 BZ-64 STEL Apply Palliative 19.0/100 0.015 BZ-64 STEL Apply Palliative 19.0/100 0.015 BZ-68 BRE Apply Palliative 19.0/100 0.015 BZ-68 BRE Apply Palliative 19.0/100 0.015 BZ-69 BRE Apply Palliative 19.0/100 0.015 BZ-60 BZ-60 BRE Apply Palliative 19.0/100 0.015 BZ-60 BZ-60 BRE Apply Palliative 19.0/100 0.015 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 BZ-6			STEL	Oversight	7.5/100	0.082	<0.017	<0.026
87/08 BZ-45 BRE BRE BRE Pump Water – Back of Truck BZ-48 Pump Water – Back of Truck BZ-5100 0.026 0.046 87/08 BZ-48 BRE BRE BRE BRE Back of Truck BZ-50 Pump Water – Back of Truck BZ-5100 0.029 0.046 8/7/08 BZ-56 BRE BRE BZ-53 Pump Water – Back of Truck BZ-5100 0.010 0.071 0.040 8/7/08 BZ-53 BRE BZ-53 STEL Operate Compactor Operate Compactor BZ-5100 0.0100 0.010 0.004 BZ-57 BRE BRE BZ-49 Water Truck Driver BZ-54 STEL BRE BZ-54 Water Truck Driver BZ-0100 0.010 0.019 8/7/08 BZ-54 BRE BZ-54 STEL BRE BZ-54 Water Truck Driver BZ-0100 0.011 0.016 BZ-59 BRE BZ-59 BRE BZ-59 BRE BZ-50 BRE BZ-50 BZ-59 BRE BZ-50 Oversight BZ-100 0.016 0.016 BZ-60 BZ-60 BZ-60 BZ-60 BZ-60 0.016 0.016 0.015 BZ-61 BZ-62 BRE Apply Palliative BZ-0100 0.016 0.016 0.017 0.015 BZ-64 BZ-64 BRE Apply Palliative BZ-0100 0.016 0.016 0.017		BZ-55	BRE	Oversight	6.0/100	0.026		
8/7/08 BZ-48 BRE Pump Water – Back of Truck 35.0/100 0.029 0.046 BZ-52 STEL Pump Water – Back of Truck 24.5/100 0.024 0.046 BZ-56 BRE Pump Water – Back of Truck 18.0/100 0.071 0.040 BZ-53 STEL Operate Compactor 28.5/100 0.0100 <0.024 BZ-57 BRE Operate Compactor 0.0/100 <0.064 <0.024 BZ-47 BRE Water Truck Driver 12.0/100 0.019 <0.024 BZ-54 BRE Water Truck Driver 12.0/100 <0.019 <0.024 BZ-54 BRE Water Truck Driver 3.5/100 <0.019 <0.022 BZ-54 BRE Water Truck Driver 3.5/100 <0.016 <0.015 BZ-59 BRE Oversight 5.0/100 <0.016 <0.016 BZ-60 BRE Apply Palliative 17.0/100 <0.016 <0.015 BZ-64 BRE Apply Palliative 19.0/100		BZ-45	BRE	Pump Water – Back of Truck	33.0/100	0.026		
BZ-52 STEL Pump Water - Back of Truck 24.5/100 0.24 0.046	8/7		BRE	Pump Water - Back of Truck	35.0/100	0.029		1
BZ-56 BRE Pump Water - Back of Truck 18.0/100 0.071			STEL	Pump Water - Back of Truck	24.5/100	0.24	0.046	0.039
8/7/08 BZ-46 BRE Operate Compactor 28.5/100 0.010 8/7/08 BZ-53 STEL Operate Compactor 0.0/100 <0.099		BZ-56	BRE	Pump Water - Back of Truck	18.0/100	0.071		
8/7/08 BZ-46 BRE Operate Compactor 28.5/100 0.010 8/7/08 BZ-53 STEL Operate Compactor 0.0/100 <0.099								
Strict Strict Operate Compactor 0.0/100 0.064 0.024 BZ-57 BRE Operate Compactor 13.0/100 0.064 0.064 BZ-47 BRE Water Truck Driver 12.0/100 0.012 0.022 BZ-49 BRE Water Truck Driver 19.0/100 0.019 0.022 BZ-54 STEL Water Truck Driver 3.5/100 0.011 0.015 BZ-59 BRE Oversight 11.5/100 0.016 0.016 BZ-67 BRE Oversight 17.0/100 0.016 0.016 BZ-67 BRE Apply Palliative 18.5/100 0.016 0.016 BZ-68 BRE Apply Palliative 19.0/100 0.016 0.016 BZ-68 BRE Apply Palliative 19.0/100 0.016 0.017 BZ-68 BRE Apply Palliative 19.0/100 0.016 0.017 BZ-68 BRE Apply Palliative 19.0/100 0.016 0.017 BZ-68 BRE Apply Palliative 19.0/100 0.015 0.017 BZ-68 BRE Apply Palliative 19.0/100 0.012 0.017 BZ-68 BRE Apply Palliative 19.0/100 0.015 0.017 BZ-68 BRE Apply Palliative 19.0/100 0.015 0.017 BZ-69 BRE Apply Palliative 19.0/100 0.016 0.017 BZ-69 BRE Apply Palliative 19.0/100 0.016 0.017 BZ-69 BRE Apply Palliative 19.0/100 0.016 0.017 BZ-69 BRE Apply Palliative 19.0/100 0.015 0.017 0.015 0.017 BZ-69 BRE Apply Palliative 19.0/100 0.015 0.017 0.015 0.017 0.015 0			BRE	Operate Compactor	28.5/100	0.010		
BZ-57 BRE Water Truck Driver 13.0/100 0.064	7/8		STEL	Operate Compactor	0.0/100	<0.099	<0.024	<0.016
8/7/08 BZ-49 BRE Water Truck Driver 12.0/100 0.012 8/7/08 BZ-54 STEL Water Truck Driver 5.0/100 -0.019 BZ-54 STEL Water Truck Driver 5.0/100 -0.019 BZ-58 BRE Water Truck Driver 3.5/100 -0.013 BZ-59 BRE Oversight 11.5/100 0.011 BZ-63 STEL Oversight 5.0/100 -0.016 BZ-67 BRE Oversight 17.0/100 0.016 BZ-67 BRE Apply Palliative 18.5/100 -0.016 BZ-68 BRE Apply Palliative 2.5/100 -0.016 BZ-68 BRE Apply Palliative 19.0/100 0.012		BZ-57	BRE	Operate Compactor	13.0/100	0.064	1	
8/7/08 BZ-47 BRE Water Truck Driver 12.0/100 0.012 8/7/08 BZ-54 STEL Water Truck Driver 5.0/100 <0.019 <0.022 BZ-54 STEL Water Truck Driver 5.0/100 <0.014 <0.022 BZ-54 STEL Water Truck Driver 5.0/100 <0.030 <0.011 BZ-59 BRE Oversight 11.5/100 <0.011 <0.015 BZ-67 BRE Oversight 17.0/100 0.016 <0.015 BZ-60 BRE Apply Palliative 2.5/100 <0.048 <0.017 BZ-64 STEL Apply Palliative 19.0/100 <0.016 <0.017								
8/7/08 BZ-54 STEL Water Truck Driver 5.0/100 0.019 <0.022 BZ-54 STEL Water Truck Driver 5.0/100 <0.074		BZ-47	BRE	Water Truck Driver	12.0/100	0.012		
BZ-54 STEL Water Truck Driver 5.0/100 <0.074 <0.022 BZ-58 BRE Water Truck Driver 3.5/100 <0.0130 BZ-59 BRE Oversight 11.5/100 <0.011 BZ-67 BRE Oversight 17.0/100 0.016 BZ-60 BRE Apply Palliative 18.5/100 <0.016 BZ-64 STEL Apply Palliative 19.0/100 0.012 BZ-68 BRE Apply Palliative 19.0/100 0.012	7/8		BRE	Water Truck Driver	19.0/100	0.019	, ,	(
8/8/08 BZ-60 BRE Water Truck Driver 3.5/100 <0.030 8/8/08 BZ-63 STEL Oversight 11.5/100 0.011 <0.015 BZ-67 BRE Oversight 17.0/100 0.016 <0.016 8/8/08 BZ-60 BRE Apply Palliative 18.5/100 0.016 <0.016 BZ-64 STEL Apply Palliative 2.5/100 <0.048 <0.017 BZ-68 BRE Apply Palliative 19.0/100 0.012			STEL	Water Truck Driver	5.0/100	<0.074	770.0>	<0.019
8/8/08 BZ-59 BRE Oversight 11.5/100 0.011 BZ-63 STEL Oversight 5.0/100 <0.066		BZ-58	BRE	Water Truck Driver	3.5/100	<0.030	ı	
8/8/08 BZ-59 BRE Oversight 11.5/100 0.011 C0.015 BZ-63 STEL Oversight 5.0/100 <0.066								
8/8/08 BZ-63 STEL Oversight 5.0/100 <0.066 <0.015 BZ-67 BRE Oversight 17.0/100 0.016 <0.015			BRE	Oversight	11.5/100	0.011		
BZ-67 BRE Oversight 17.0/100 0.016	8/8		STEL	Oversight	5.0/100	>0.066	<0.015	<0.016
8/8/08 BZ-60 BRE Apply Palliative 18.5/100 0.016 BZ-64 STEL Apply Palliative 2.5/100 <0.048 <0.017 BZ-68 BRE Apply Palliative 19.0/100 0.012		BZ-67	BRE	Oversight	17.0/100	0.016		
8/8/08 BZ-60 BRE Apply Palliative 18.5/100 0.016 BZ-64 STEL Apply Palliative 2.5/100 <0.048 <0.017 BZ-68 BRE Apply Palliative 19.0/100 0.012								
8/8/08 BZ-64 STEL Apply Palliative 2.5/100 <0.048 <0.017 BZ-68 BRE Apply Palliative 19.0/100 0.012			BRE	Apply Palliative	18.5/100	0.016		
BZ-68 BRE Apply Palliative 19.0/100 0.012	8/8		STEL	Apply Palliative	2.5/100	<0.048	<0.017	<0.016
		BZ-68	BRE	Apply Palliative	19.0/100	0.012	•	

Fibers per cubic centimeter of air ² Time Weighted Average ³ BRE – Breathing Zone ⁴ STEL – Short Term Excursion Limit





ADOT&PF Ambler Airport Repair and Dust Suppression Asbestos Breathing Zone Sample Analysis November 26, 2008

		Date	Sample #	Sample Type ^{3, 4}	Task	Fibers/Fields	Fiber Concentration (F/cc) ¹	8-hour TWA2	Actual TWA2
			BZ-61	BRE	Apply Palliative	13.0/100	0.009		
	ļ	80/8/8	BZ-65	STEL	Apply Palliative	3.5/100	<0.059	<0.018	<0.014
			BZ-69	BRE	Apply Palliative	16.0/100	0.015		· · ·
			BZ-62	BRE	Apply Palliative	17.0/100	0.019	AMAZAN AND AND AND AND AND AND AND AND AND A	
	Ì	80/8/8	BZ-66	STEL	Apply Palliative	1.5/100	<0.059	<0.022	<0.071
ļ			BZ-70	BRE	Apply Palliative	20.0/100	0.019))	; ;
L			7		, , , , , , , , , , , , , , , , , , ,	22.4	0.017		

Fibers per cubic centimeter of air ² Time Weighted Average ³ BRE – Breathing Zone ⁴ STEL – Short Term Excursion Limit



ENVIRONMENTAL ENGINEERING, HEALTH & SAFETY

Anch: 3105 Lakeshore Dr. Ste 106A, 99517 907.222.2445 Fax: 222.0915
Juneau: 119 Seward Street #10, 99801, 907.586.6813 Fax: 586-6819
Fairbanks: 2400 College Rd, 99709 907.452.5688 Fax: 452.5694
info@nortechengr.com www.nortechengr.com

Table 2: Asbestos Area Sample Results

A-01 8/5/08 Runway - South 4.0/100 <0.005 A-02 8/5/08 Runway - South 7.0/100 <0.005 A-03 8/5/08 Runway - South 5.0/100 <0.005 A-04 8/5/08 Runway - South 5.0/100 <0.005 A-04 8/5/08 Runway - South 5.0/100 <0.005 A-05 8/5/08 Runway - North 4.5/100 <0.005 A-06 8/5/08 Runway - North 13.5/100 <0.005 A-07 8/5/08 Runway - North 5.0/100 <0.005 A-08 8/5/08 Runway - North 5.0/100 <0.005 A-09 8/5/08 Runway - North 9.0/100 0.006 A-10 8/5/08 Runway - North 9.0/100 0.006 A-11 8/5/08 Runway - North 9.0/100 0.006 A-11 8/5/08 Runway - North 4.0/100 <0.005 A-12 8/5/08 Runway - North 3.5/100 <0.005 A-13 8/5/08 Runway - North 3.0/100 <0.005 A-14 8/6/08 Runway - North 2.0/100 <0.005 A-15 8/6/08 Runway - North 2.0/100 <0.005 A-16 8/6/08 Apron 4.0/100 <0.005 A-17 8/6/08 Apron 4.0/100 <0.005 A-18 8/6/08 Apron 3.0/100 <0.005 A-19 8/6/08 Apron 1.0/100 <0.005 A-20 8/6/08 Apron 1.0/100 <0.005 A-21 8/6/08 Apron 1.0/100 <0.005 A-22 8/6/08 Apron 1.0/100 <0.005 A-24 8/6/08 Apron 1.0/100 <0.005 A-25 8/6/08 Apron 1.0/100 <0.005 A-26 8/6/08 Apron 1.0/100 <0.005 A-27 8/6/08 Apron 1.0/100 <0.005 A-28 8/6/08 Apron 1.0/100 <0.005 A-29 8/7/08 Apron 1.0/100 <0.005 A-33 8/7/08 Runway - Middle 2.0/100 <0.005 A-34 8/7/08 Runway - Middle 2.0/100 <0.005 A-35 8/7/08 Runway - Middle 2.0/100 <0.005 A-36 8/7/08 Runway - Middle 2.0/100 <0.005 A-36 8/7/08 Runway - Middle 4.0/100 <0.005 A-36 8/7/08 Runway - Middle 4.0/100 <0.005	Sample		Location	Density	Concentration
A-01 8/5/08 Runway - South 7.0/100 <0.005 A-02 8/5/08 Runway - South 7.0/100 <0.005 A-03 8/5/08 Runway - South 5.0/100 <0.005 A-04 8/5/08 Runway - South 5.0/100 <0.005 A-05 8/5/08 Runway - North 4.5/100 <0.005 A-06 8/5/08 Runway - North 13.5/100 <0.005 A-07 8/5/08 Runway - North 13.5/100 <0.005 A-08 8/5/08 Runway - North 5.0/100 <0.005 A-09 8/5/08 Runway - North 9.0/100 0.006 A-10 8/5/08 Runway - North 9.0/100 0.006 A-11 8/5/08 Runway - North 3.5/100 <0.005 A-11 8/5/08 Runway - North 3.5/100 <0.005 A-13 8/5/08 Runway - North 4.0/100 <0.005 A-14 8/6/08 Runway - North 2.0/100 <0.005 A-15 8/6/08 Runway - North 2.0/100 <0.005 A-16 8/6/08 Apron 4.0/100 <0.005 A-17 8/6/08 Apron 4.0/100 <0.005 A-18 8/6/08 Apron 3.0/100 <0.005 A-19 8/6/08 Apron 1.0/100 <0.005 A-20 8/6/08 Apron 1.0/100 <0.005 A-21 8/6/08 Apron 1.0/100 <0.005 A-22 8/6/08 Apron 1.0/100 <0.005 A-23 8/6/08 Apron 1.0/100 <0.005 A-24 8/6/08 Apron 1.0/100 <0.005 A-25 8/6/08 Apron 1.0/100 <0.005 A-26 8/6/08 Apron 1.0/100 <0.005 A-27 8/7/08 Apron 1.0/100 <0.005 A-28 8/7/08 Apron 1.0/100 <0.005 A-29 8/7/08 Apron 1.0/100 <0.005 A-29 8/7/08 Apron 1.0/100 <0.005 A-29 8/7/08 Apron 1.0/100 <0.005 A-20 8/6/08 Apron 0.0/100 <0.005 A-21 8/6/08 Apron 1.0/100 <0.005 A-22 8/6/08 Apron 0.0/100 <0.005 A-23 8/6/08 Apron 1.0/100 <0.005 A-24 8/6/08 Apron 0.0/100 <0.005 A-25 8/6/08 Apron 0.0/100 <0.005 A-26 8/6/08 Apron 0.0/100 <0.005 A-27 8/7/08 Apron 0.0/100 <0.005 A-28 8/7/08 Apron 0.0/100 <0.005 A-29 8/7/08 Apron 0.0/100 <0.005 A-31 8/7/08 Runway - Middle 2.0/100 <0.005 A-33 8/7/08 Runway - Middle 2.0/100 <0.005 A-34 8/7/08 Runway - Middle 2.0/100 <0.005 A-35 8/7/08 Runway - Middle 2.0/100 <0.005	Sample	Date	Location		
A-02 8/5/08 Runway - South 7.0/100 <0.005 A-03 8/5/08 Runway - South 5.0/100 <0.005	A-01	8/5/08	Runway – South		
A-03 8/5/08 Runway - South 5.0/100 <0.005 A-04 8/5/08 Quarry 0.0/100 <0.005	A-02	8/5/08		7.0/100	·
A-04 8/5/08 Quarry 0.0/100 <0.005 A-05 8/5/08 Runway – North 4.5/100 <0.005	A-03	8/5/08	Runway – South	5.0/100	
A-05 8/5/08 Runway – North 4.5/100 <0.005 A-06 8/5/08 Runway – North 13.5/100 <0.005	A-04	8/5/08		0.0/100	< 0.005
A-06 8/5/08 Runway - North 13.5/100 <0.005 A-07 8/5/08 Runway - North 5.0/100 <0.005	A-05	8/5/08		4.5/100	
A-08 8/5/08 Quarry 3.0/100 <0.005 A-09 8/5/08 Runway – North 9.0/100 0.006 A-10 8/5/08 Runway – North 3.5/100 <0.005	A-06	8/5/08		13.5/100	
A-08 8/5/08 Quarry 3.0/100 <0.005 A-09 8/5/08 Runway – North 9.0/100 0.006 A-10 8/5/08 Runway – North 3.5/100 <0.005	A-07	8/5/08	Runway – North	5.0/100	< 0.005
A-10 8/5/08 Runway - North 3.5/100 <0.005 A-11 8/5/08 Runway - North 4.0/100 <0.005	A-08	8/5/08		3.0/100	< 0.005
A-10 8/5/08 Runway - North 3.5/100 <0.005 A-11 8/5/08 Runway - North 4.0/100 <0.005	A-09	8/5/08	Runway – North	9.0/100	
A-12 8/5/08 Runway - North 3.0/100 <0.005 A-13 8/5/08 Runway - North 2.0/100 <0.005	A-10	8/5/08		3.5/100	< 0.005
A-13 8/5/08 Runway – North 2.0/100 <0.005 A-14 8/6/08 Quarry 2.5/100 <0.005	A-11	8/5/08	Runway - North	4.0/100	<0.005
A-14 8/6/08 Quarry 2.5/100 <0.005 A-15 8/6/08 Apron 4.0/100 <0.005	A-12	8/5/08	Runway – North	3.0/100	
A-15 8/6/08 Apron 4.0/100 <0.005 A-16 8/6/08 Apron 4.0/100 <0.005	A-13	8/5/08	Runway – North	2.0/100	< 0.005
A-16 8/6/08 Apron 4.0/100 <0.005 A-17 8/6/08 Apron 3.0/100 <0.005	A-14	8/6/08	Quarry	2.5/100	< 0.005
A-17 8/6/08 Apron 3.0/100 <0.005 A-18 8/6/08 Apron 2.0/100 <0.005	A-15	8/6/08	Apron	4.0/100	< 0.005
A-18 8/6/08 Apron 2.0/100 <0.005 A-19 8/6/08 Apron 1.0/100 <0.005	A-16	8/6/08	Apron	4.0/100	< 0.005
A-19 8/6/08 Apron 1.0/100 <0.005 A-20 8/6/08 Apron 4.5/100 <0.005	A-17	8/6/08	Apron	3.0/100	< 0.005
A-20 8/6/08 Apron 4.5/100 <0.005 A-21 8/6/08 Apron 0.0/100 <0.005	A-18	8/6/08	Apron	2.0/100	< 0.005
A-21 8/6/08 Apron 0.0/100 <0.005 A-22 8/6/08 Apron 1.0/100 <0.005	A-19	8/6/08	Apron	1.0/100	<0.005
A-22 8/6/08 Apron 1.0/100 <0.005 A-23 8/6/08 Apron 2.0/100 <0.005	A-20	8/6/08	Apron	4.5/100	< 0.005
A-23 8/6/08 Apron 2.0/100 <0.005 A-24 8/6/08 Apron 4.0/100 <0.005	A-21	8/6/08	Apron	0.0/100	< 0.005
A-24 8/6/08 Apron 4.0/100 <0.005 A-25 8/6/08 Apron 3.0/100 <0.005	A-22	8/6/08	Apron	1.0/100	<0.005
A-25 8/6/08 Apron 3.0/100 <0.005 A-26 8/6/08 Apron 1.0/100 <0.005		8/6/08	Apron	2.0/100	<0.005
A-26 8/6/08 Apron 1.0/100 <0.005 A-27 8/7/08 Apron 12.5/100 <0.005	A-24	8/6/08	Apron	4.0/100	<0.005
A-27 8/7/08 Apron 12.5/100 <0.005 A-28 8/7/08 Apron 9.0/100 <0.005		8/6/08	Apron	3.0/100	<0.005
A-28 8/7/08 Apron 9.0/100 <0.005 A-29 8/7/08 Apron 15.0/100 <0.005		8/6/08	Apron	1.0/100	<0.005
A-29 8/7/08 Apron 15.0/100 <0.005 A-30 8/7/08 Apron 6.5/100 <0.005			Apron	12.5/100	<0.005
A-30 8/7/08 Apron 6.5/100 <0.005 A-31 8/7/08 Runway – Middle 8.0/100 <0.005	A-28	8/7/08	Apron	9.0/100	<0.005
A-31 8/7/08 Runway – Middle 8.0/100 <0.005 A-32 8/7/08 Runway – Middle 2.0/100 <0.005		8/7/08	Apron	15.0/100	<0.005
A-32 8/7/08 Runway – Middle 2.0/100 <0.005				6.5/100	<0.005
A-32 8/7/08 Runway – Middle 2.0/100 <0.005	A-31	8/7/08	Runway – Middle	8.0/100	<0.005
A-33 8/7/08 Runway – Middle 1.0/100 <0.005	A-32	8/7/08		 	
A-35 8/7/08 Runway – Middle 4.5/100 <0.005	A-33	8/7/08	Runway – Middle	1.0/100	
A-35 8/7/08 Runway – Middle 4.5/100 <0.005	A-34	8/7/08	Runway – Middle	2.0/100	<0.005
	A-35	8/7/08	Runway – Middle	4.5/100	
	A-36	8/7/08	Runway – Middle	4.0/100	<0.005

¹ Fibers per cubic centimeter

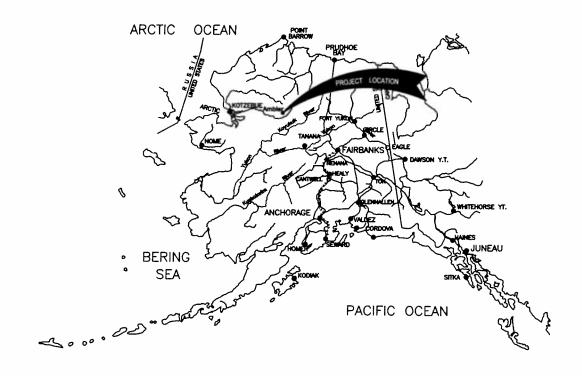
NOTE: See Figure 3 for Sample Locations



Appendix B

ADOT Mainteance Ambler Airport Runway Upgrade NOA Ambler, Alaska

November, 2008 PROJECT #61021



Prepared By:



ENVIRONMENTAL ENGINEERING HEALTH & SAFETY 2400 College Road, Fairbanks, Alaska 99709 Ph: 907-452-5688 3105 Lakeshore Dr. Anch, Alaska 99517, Ph: 907-222-2445 119 Seward St. #10, Juneau, Alaska 99801 Ph: 907-586-6813

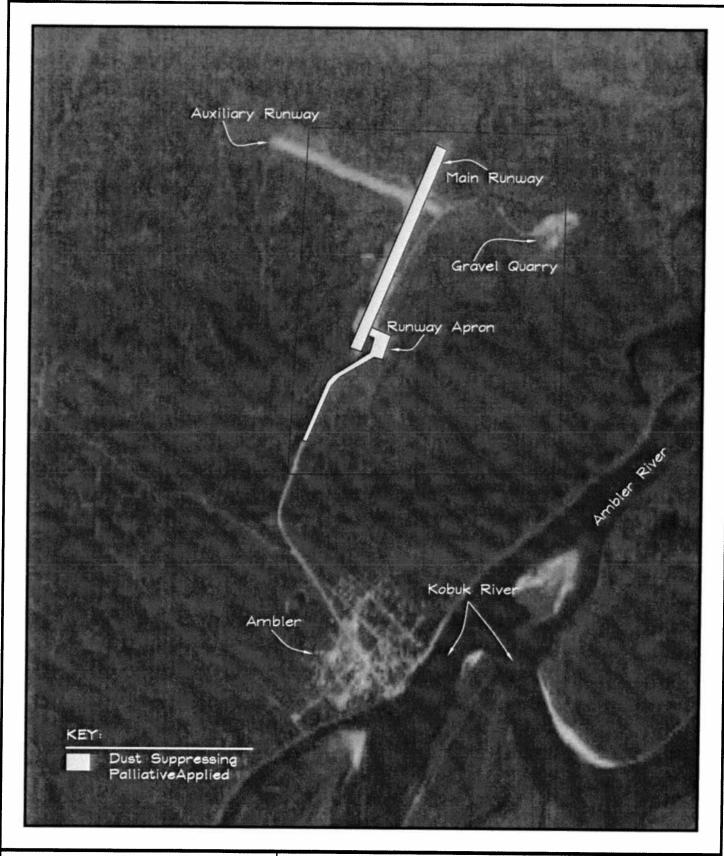
For: Alaska Department of Transportation and Public Facilities

ADOT Statewide Hazardous Waste and Environmental Services Term Agreement - 2008

INDEX OF SHEETS

FIGURE 1: Vicinity Sheet FIGURE 2: Site Man

FIGURE 2: Site Map
FIGURE 3: Sample Location Map



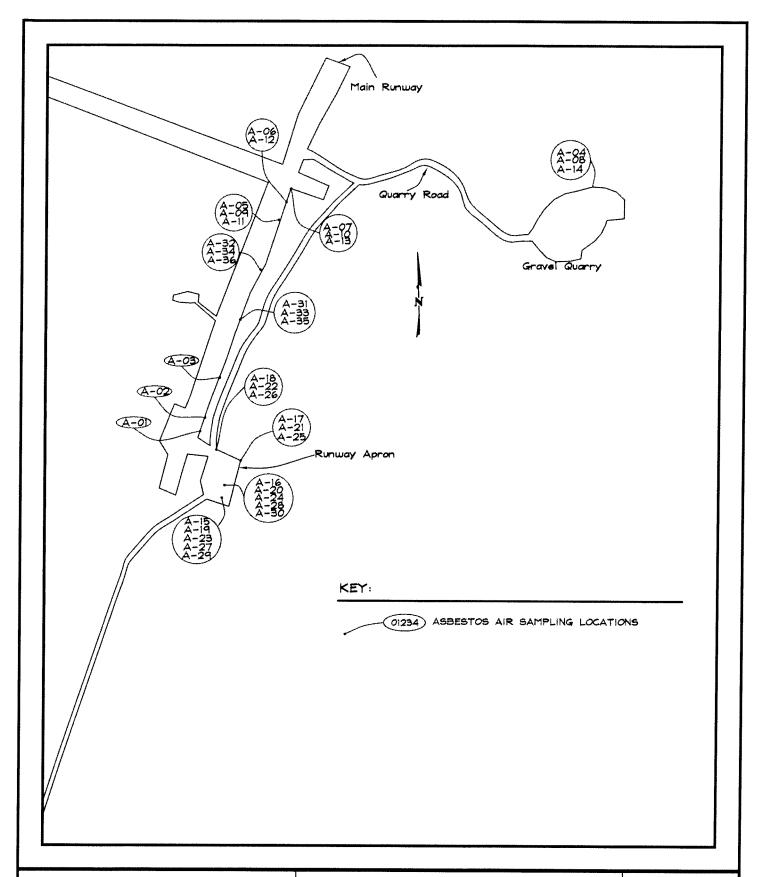


ENVIRONMENTAL ENGINEERING HEALTH & SAFETY 2400 College Road, Fairbanks, Alaska 99709 Ph: 907-452-5688 3105 Lakeshore Dr. Anch, Alaska 99517, Ph: 907-222-2445 119 Seward St. #10, Juneau, Alaska 99801 Ph: 907-586-6813

Site Map ADOT Ambler Airport NOA Ambler, Alaska

DATE: 1	1/18/08
DESIGN:	AW
DRAWN:	KDB
PROJECT	OIOLI
DWG:	082500(c)
COALE	NTC

FIGURE: 2 SCALE: N





Asbestos Area Sample Locations ADOT Ambler Airport NOA Ambler, Alaska

DATE: 1	11/18/08
DESIGN:	AW
DRAWN:	KDB
PROJECT	NO: 61021
DWG:	082500(c)
SCALE:	NTS

FIGURE: 3 SCA

Appendix C



ENVIRONMENTAL ENGINEERING, HEALTH & SAFETY Anch: 3105 Lakeshore Dr. Ste 106A, 99517

Juneau: 119 Seward Street #10, 99801 Fairbanks: 2400 College Rd, 99709 Project Name: ADOT R&M Ambler Airport NOA

Project Number: 08-2500

PHOTO PAGES



Photo 1: Loading Gravel at Quarry



Photo 2: Grading Runway



Photo 3: Spreading Gravel on Runway



Photo 4: No Visible Dust Emissions During Grading



ENVIRONMENTAL ENGINEERING, HEALTH & SAFETY Anch: 3105 Lakeshore Dr. Ste 106A, 99517 Juneau: 119 Seward Street #10, 99801 Fairbanks: 2400 College Rd, 99709

Project Name: ADOT R&M Ambler Airport NOA Project Number: 08-2500

PHOTO PAGES

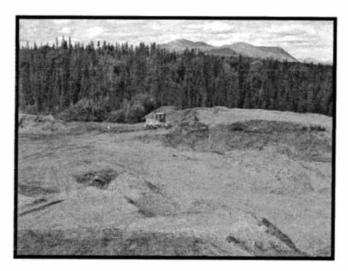


Photo 5: Gravel Quarry



Photo 6: Area Monitoring on Runway



Photo 7: Applying Water to Runway



Photo 8: Compacting Runway



ENVIRONMENTAL ENGINEERING, HEALTH & SAFETY

Anch: 3105 Lakeshore Dr. Ste 106A, 99517 Juneau: 119 Seward Street #10, 99801 Fairbanks: 2400 College Rd, 99709

Project Name: ADOT R&M Ambler Airport NOA Project Number: 08-2500

PHOTO PAGES

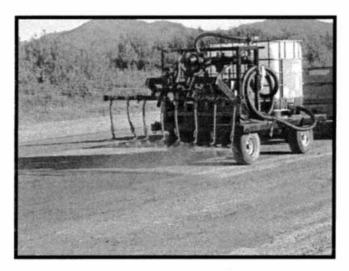


Photo 9: Applying Palliative on Runway



Photo 10: Applying Palliative on Apron

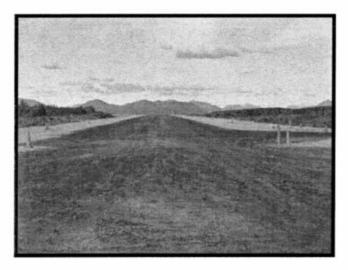


Photo 15: Runway After Palliative Application

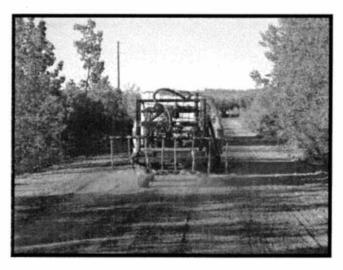


Photo 12: Applying Palliative on Airport Road

Appendix D

7469 WHITE PINE ROAD - RICHMOND, VA 23237 804-275-4788 FAX 804-275-4907

FIBER COUNT ANALYSIS SUMMARY

CLIENT:

Nortech

DATE OF SAMPLING: 04 Aug 2008

2400 College Road

DATE OF RECEIPT: 15 Aug 2008

Fairbanks, AK 99709-3754

DATE OF ANALYSIS: 16 Aug 2008 DATE OF REPORT: 18 Aug 2008

CLIENT NUMBER:

entransi

EHS PROJECT #:

2008-08-0832

PROJECT: 08-2500-R&M Ambler; NCA

EHS SAMPLE#	CLIENT SAMPLE#	VOLUME LITERS(L)	FIBERS/FIELDS	FIBERS/CC
01	BZ-01	411.75	6.5/100	0.008
02	BZ-05	236.25	2.5/100	<0.013
03	BZ-10 TWA= <0.014 F/cc (TWA bas	45 ed on Time Sampled)	4.0/100	<0.066
04	BZ-02	375	15.0/100	0.020
05	BZ-06	280	21.0/100	0.037
06	BZ-09	45	10.5/100	0.11
07	BZ-13 TWA= 0.034 F/cc (TWA base	125 d on Time Sampled)	11.0/100	0.043
08	BZ-04	296	8.5/100	0.014
09	BZ-08 TWA= 0.019 F/cc (TWA base	180 d on Time Sampled)	9.5/100	0.026
10	BZ-07	376	10.0/100	0.013
11	BZ-11	40	3.5/100	< 0.074
12	BZ-12 TWA= <0.022 F/cc (TWA bas	80 ed on Time Sampled)	1.5/100	<0.037
13	BZ-16	407.25	4.5/100	<0.008
14	BZ-18 6Z-1	45	4.0/100	<0.066
15	BZ-22	562.5	9.0/100	0.008
16	BZ-26 TWA= <0.011 F/cc (TWA bas	382.5 ed on Time Sampled)	8.5/100	0.011

CLIENT NUMBER:

EHS PROJECT #: PROJECT:

2008-08-0832

PROJECT:

08-2500-R&M Ambler; NCA

PROJECT:	08-2500-R&M Amble	er; NCA		
EHS SAMPLE#	CLIENT SAMPLE#	VOLUME LITERS(L)	FIBERS/FIELDS	FIBERS/CC
17	BZ-14	462.5	32.0/100	0.034
18	BZ-20	50	5.5/100	< 0.059
19	BZ-23	637.5	21.5/100	0.017
20	BZ-27 TWA= <0.024 F/cc (TWA ba	412.5 sed on Time Sampled)	16.0/100	0.019
21	BZ-17	510	15.5/100	0.015
22	BZ-21	46	5.5/100	< 0.064
23	BZ-24 TWA= <0.012 F/cc (TWA ba	970 sed on Time Sampled)	14.5/100	0.007
24	BZ-15	360	12.0/100	0.016
25	BZ-19	44	8.5/100	0.095
26	BZ-25	510	19.0/100	0.018
27	BZ-28 TWA=0.028 F/cc (TWA base	330 d on Time Sampled)	31.0/100	0.046
28	BZ-29	443.25	12.5/100	0.014
29	BZ-34	335.25	11.0/100	0.016
30	BZ-36	40.5	3.5/100	< 0.073
31	BZ-40 TWA= <0.018 F/cc (TWA bas	171 sed on Time Sampled)	6.0/100	< 0.017
32	BZ-30	462.5	20.5/100	0.022
33	BZ-33	370	16.5/100	0.022
34	BZ-37	45	1.0/100	<0.066
35	BZ-41 TWA= <0.027 F/cc (TWA bas	197.5 ed on Time Sampled)	15.0/100	0.037
36	BZ-31	858	39.0/100	0.022
37	BZ-38	46	5.5/100	< 0.064

CLIENT NUMBER:

2008-08-0832

EHS PROJECT #: PROJECT:

08-2500-R&M Ambler; NCA

EHS SAMPLE#	CLIENT SAMPLE#	VOLUME LITERS(L)	FIBERS/FIELDS	FIBERS/CC
38	BZ-42 TWA= <0.029 F/cc (TWA bas	156 sed on Time Sampled)	17.0/100	0.053
39	BZ-32	368	16.0/100	0.021
40	BZ-35	280	12.5/100	0.022
41	BZ-39	36	3.5/100	< 0.082
42	BZ-43 TWA= <0.026 F/cc (TWA bas	154 sed on Time Sampled)	9.0/100	0.029
43	BZ-44	225	2.5/100	< 0.014
44	BZ-50	342	17.5/100	0.025
45	BZ-51	45	7.5/100	0.082
46	BZ-55 TWA= <0.026 F/cc (TWA bas	112.5 sed on Time Sampled)	6.0/100	0.026
47	BZ-45	612.5	33.0/100	0.026
48	BZ-48	600	35.0/100	0.029
49	BZ-52	50	24.5/100	0.24
. 50	BZ-56 TWA= 0.039 F/cc (TWA base	125 d on Time Sampled)	18.0/100	0.071
51	BZ-46	1396	28.5/100	0.010
52	BZ-53	30	0.0/100	< 0.099
53	BZ-57 TWA= <0.016 F/cc (TWA bas	100 ed on Time Sampled)	13.0/100	0.064
54	BZ-47	480	12.0/100	0.012
55	BŹ-49	480	19.0/100	0.019
56	BZ-54	40	5.0/100	< 0.074
57	BZ-58 TWA= <0.019 F/cc (TWA bas	100 ed on Time Sampled)	3.5/100	<0.030
58	BZ-59	495	11.5/100	0.011

CLIENT NUMBER: EHS PROJECT #:

2008-08-0832

PROJECT:

08-2500-R&M Ambler; NCA

EHS SAMPLE#	CLIENT Sample#	VOLUME LITERS(L)	FIBERS/FIELDS	FIBERS/CC
59	BZ-63	45	5.0/100	<0.066
60	BZ-67 TWA= <0.016 F/cc (TWA bas	506.25 ed on Time Sampled)	17.0/100	0.016
61	BZ-60	550	18.5/100	0.016
62	BZ-64	62.5	2.5/100	<0.048
63	BZ-68 TWA= <0.016 F/cc (TWA bas	750 ed on Time Sampled)	19.0/100	0.012
64	. So T	730	13.0/100	0.009
65	BZ-65	50	3.5/100	< 0.059
66	BZ-69 TWA= <0.014 F/cc (TWA bas	530 ed on Time Sampled)	16.0/100	0.015
67	BZ-62	440	17.0/100	0.019
68	BZ-66	50	1.5/100	< 0.059
69	BZ-70 TWA= <0.021 F/cc (TWA bas	530 ed on Time Sample)	20.0/100	0.019

METHOD:

NIOSH 7400, Issue 2, 08/15/94

ANALYST:

Christian H. Schaible

Reviewed By Authorized Signatory:

Howard Varner, General Manager

Irma Faszewski, Quality Assurance Coordinator

CLIENT NUMBER: EHS PROJECT #:

2-2641 A 2008-08-0832

PROJECT:

08-2500-R&M Ambler; NCA

Interlaboratory Sr for fiber count ranges 5-20, 20-50, and >50 respectively are 0.136, 0.118, 0.111. Intralaboratory Sr for fiber count ranges 5-20, 20-50, and >50 respectively are 0.179, 0.108, 0.052 for Mark Case; 0.189, 0.108, 0.050 for Kathy Sizemore; and 0.175, 0.105, 0.050 for all other analysts.

NOTE: The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. The submission of blank samples is required by sampling methodologies. EHS sample results (fibers/cc) are blank corrected, per NIOSH 7400, when the client submits blank samples. If the report does not contain the result for a field blank, it is due to the fact that the client did not include a field blank with their samples. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full without the written consent of Environmental Hazards Services, L.L.C. California Certification #2319 NY ELAP #11714

Method Level of Detection: Estimated at 7 fibers/mm².

LEGEND

L = liters

fibers/mm2 = fibers per square millimeter

fibers/cc = fibers per cubic centimeter pcm3.dot/05AUG2008/REV3/ MR

rapiese Prot

. gothuse

-- PAGE 05 of 05 -- END OF REPORT --

ЕНЅ 2008-08-0832 $\int_{C} Q \rho Cr^{-}$

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907 CHAIN OF CUSTODY FORM

3	Company Name: Mertech		STE 101	A.	Date: 8/1	8/13/cF		
Inchicase AK	1	19	7/7	8	Sampler Name:	The same of the sa	\$	
EHS Client Account #: 2-2641-A		.	1		Project #: 08-2500	-2500-	Rim Amble	
Phone #: 707-266-4250 F.	ŭ.	Fax #:	160-222-106	5760-2	7	10.4		
Asbestos		Lead		Other Metals	s Indoor	Particulate: Total Nuisance (NIOSH 0500)	sance (NIOSH 0500)	
	75			(Specify metals below)	س Air Quality	Resp	Respirable (NIOSH 0600)	
. Count Jount A (Air) Ma(Bul				əu		Air Volume (L)		- - -
Py Post Fiber Coint Coin	(%		Pb) Wate	ոս 🗕 ይ	sw2 e	Wipe Area (ft²)	Comments	lime elapses during
Air Paint (9	Air Paint (9	Paint (I	TCLP (TCLP F Weldin Toxic M	Biocass Slide Surface Surface	Scrape Area(cm²)		collector (Minutes)
×						411.75 6	Calculate	183
						256.25C	> 8 -hour	105
						45 C	/ TWA	20
						375 6		750 000
						280 L	Calculate	19
						456	/ 8-hour TWA	18
						125 L		50
						7960	Calulate	148
						1800	B-hour TWA	90
		\exists						
* Do wipe samples submitted meet ASTM E1792 requiren	1792 requ	ireme	nents? Yes	No Us				
Released by: //my/ferdo (o / Signature:	Signatu		Enullie	roleA		Date/Time: $ar{\mathcal{E}}$	8/13/08 (~ 1600	\
Signature:	Signat	ure:	大学が	7~		Date/Time: \$	1508 10:00	ı
Signature:	Signati	ure:				Date/Time:		
Signature	Signe	ıture:				Date/Time:		

ENVIRONMENTAL HAZARDS SERVICES, L.L.C. 7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907

during Sample collection minutes elapsed 80 250 4/2 4 Ine 9 g 00 Amble 000) 3,3 Comments calculate 8-hour Colculate 8- hour 4MH 4MH Particulate: Total Nuisance (NIOSH 0500) Respirable (NIOSH 0600) S S Date/Time: 8//3 407.254 Air Volume (L) Wipe Area (ft²) 562.5L 3766 Project #: 08-2500 401 十5.7 Date/Time: Area(cm² Date/Time: Scrape Date/Time: 382.5 8/13/6 Contact Name: Bnlk Sampler Name: Air Quality Indoor Surface Tape Surface Swab CHAIN OF CUSTODY FORM Date: əpile Biocassette Other Metals £ Fax#: 807-222-0915 oxic Metal Profile əmu∃ gnibləV\ **1CLP RCRA 8** χes Vaste Water LCLP (Pb) Wipe * (See Note) Do wipe samples submitted meet ASTM E1792 requirements? lioS Lead Caint (mg/cm²) Signature: Signature: Signature: Signature: (M99) Inis9 Delve (%) Inis9 ٦iA LEW Chatfield (Bulk) EHS Client Account #: Z-2641-1 Asbestos (Air) AABHA (Air) Lateshore PLM Gravimetric City, State, Zip: Anchacase Phone #: 907-266-4250 PLM Point Count Released by: $4m \cup Randolo L$ るころ (PCM) Fiber Count BULK ID by PLM P.O. #: Of-2500 80118 Sample Date & 8/11/8 8/5/08 8/11/8 8 5 08 20/2/8 8/5/08 Time 80/5/8 Address: S/OS Company Name: Received by: BZ-07 Released by: Received by: 82-03 Sample Number B 2-12 B2-33 B2-36 82-11 BZ-16 87-18



ENVIRONMENTAL HAZARDS SERVICES, L.L.C. 7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907

Sample collector(elapsed 255 255 23 485 1651 185 ロンスタ 0/600 Comments calculate 8-hour calculate 8- hour TWA Particulate: Total Nuisance (NIOSH 0500) TWA Respirable (NIOSH 0600) 8051S Date/Time: 8//3/08 Wipe Area (ft²) OR Air Volume (L) Project #: 08-2500 419.56 Date/Time: Area(cm²) 466 637.5 Scrape するとの Date/Time: Date/Time: 50L 5101 Contact Name: Brik Sampler Name: Air Quality Surface Tape Indoor Surface Swab CHAIN OF CUSTODY FORM Date: Slide Biocassette Other Metals ŝ Fax #: 807-222-0915 oxic Metal Profile omu∃ gnible\ RCLP RCRA 8 Yes Vaste Water Wipe * (See Note) Do wipe samples submitted meet ASTM E1792 requirements? lioS Lead Signature: Signature: Signature: Signature: (M99) Inis9 Address: 3105 Lokeshore Drive Paint (%) TEM Chatfield (Bulk) Asbestos (Air) ARBHA MAI PLM Gravimetric City, State, Zip: Anchorage EHS Client Account #: Z-2641 Phone #: 907-266-4250 PLM Point Count Released by: Amu Randous L JOHO BOS (PCM) Fiber Count BULK ID by PLM P.O. #: Of-250G Sample 80508 Date & Time Company Name: 🏑 Received by: Released by: Received by: Sample Number 85-3H B3-30 B2-27 BE-17 BZ-33 Bt - 21 12-28

ENVIRONMENTAL HAZARDS SERVICES, L.L.C. 7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907 **CHAIN OF CUSTODY FORM**

		1	ı	1 (1			į.	elaped	Sample	MINUTES	200	250	165	76	770	×	7,									
			,	Qim Amble			Particulate: Total Nuisance (NIOSH 0500)	Respirable (NIOSH 0600)		Comments			S. L. C.	TAIA	S.A.		Calculate	人	TWA		- 1	\$15/00 C 1000						
	8/13/64	1		-2500 -	ICA		Particulate: Total Nui	Resp	Air Volume (L)	OR Wipe Area (ft²)			תם /	5107	3306	443,256	33 5,256	40.57	1716		Date/Time: 8/12/20	Date/Time: S	1	Date/Time:				
LCKW	Date: Sil	Contact Name:	Sampler Name:	Project #: 08-2500	7		s Indoor	Ä		sw2	Siocass Slide Surface Surface	3																
CHAIN OF CUSTOUT FURIN					اسا		Other Metals	(Specify metals below)	8 . ər	SCRA Tun E	Waste / TCLP F Welding Moxic M									Yes	A. hand							
TA KINDE		STE 10CA	6	.	Fax#: 907-222-091.		Lead		((ətoN	ng/cn (See	Paint (r Soil Wipe * TCLP (]	1	Ire:	Jre:	ure:
		Deluc	AK	1-4	_	1	stos	(X II	(1iA) A	%) :hatfie :HER,	PLM G TEM C Air Paint (^c									TM E1792 requ	Signatu	Signature:	Signature:	Signatu				
	Vortech	Lateshore	schorage	# 2-264	266-4280	20	Asbestos	Ĵ	Count Count	P yd (Fiber O frio	PLM P (PCM) Bulk ID	X 80	(08	1 80/5	\ \ \ 80	X Sc	\ 80	80,	08	mitted meet AS	Pandolo	KZP (C)	0					
	Company Name: Mortech	ss: 3105	City, State, Zip:	EHS Client Account #: Z-264/	Phone #: 907-266-4250	P.O. #: OF-25CG				Sample Dat		15 8/5/08	19 8/5/08	80	90			ı	80/9/8 01-29	Do wipe samples submitted meet ASTM E1792 requirements?	Released by: Amy Pando Co	ad by: $K \lesssim$	ed by:	ed by:				
	Comp	Address:	City, S	EHS C	Phone	P.O. #:		*		Sa		B 2-7	82-19	. 29	85	B2 . 29	82-34	BZ	67	* Do wi	Releas	Received by:	Released by:	Received by:				

ENVIRONMENTAL HAZARDS SERVICES, L.L.C. 7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907 CHAIN OF CUSTODY FORM

	1 1	-	<u>.</u> Y						<u> <u> </u></u>	elapsed during sample	collection (m.	185	148	00	64	42,	8	48	<u> </u>	<u> </u>			-	
			- Rim Amble			Particulate: Total Nuisance (NIOSH 0500)	Respirable (NIOSH 0600)		2	Comments		Calculate	1 2-hour	TWA	,	Calculate	709-0	IWA			12/21	1.5/00 C	C10/13 10/11)	
13/68			F-2500.	WCA		Particulate: Total Nu	Res	Air Volume (L)	OR Wine Area (# ²)			275	70.0	45 [19+56	058 L	101	JOCE			Osta Time	~	-	Date/Time:
Date: 8/1	Contact Name:	Sampler Name:	Project #: 08-2500		L		M Air Quality		Swal	iocasse urace 9 urace 9 ulk	S S													
	26.4		ŧ	107-266-0413		Other Metals	(Specify metals below)	8 91	ARC TuT	Vaste V Velding oxic Me	Λ Λ									Yes No	Man Suff	01		
	STE 1	1367		ì	poo	Leau	(?	ətoN	,p) ,2ee d\cu	sint (m soil Mine * (P (P)	1 8										Moul	X	ē.	.e.
	e Delue		K.	FaX #:	the		-	ıiA) A	HERV Istfie	PLM Gray TEM CH Air Saint (%	1									Do wipe samples submitted meet ASTM E1792 requirements?	Signature:	Signature:	Signature:	Signature:
Company Name: Mortech	Address: SIOS Lakeshore Delive	2000	Phone # : 907 - 7/6 - 4260	20	Ashestos		ĵи	Count Count	Py P -iber int C	orw bo (bcw) b ank ID	×	/								mitted meet AS	Ranctolol		5	
ny Name: 1	12 3/05 14 710: A	ina, trip.	ant Account #	P.O. #: OF-2500				olame?		Time	80/0/8	3	42	1		188	45			samples subr	Ama	ΚÇ	f by:	by:
Сотрап	Address City Sta	בתני כווי	Phone #	P.O. #:					Sample		B2-30	82-33	42-24	87-4	62-31	85-38		*	÷	Do wipe	Released by:	Received by:	Released by:	Received by:

7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907 CHAIN OF CUSTODY FORM

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			Rim Amble				Particulate: Total Nuisance (NIOSH 0500)	Respirable (NIOSH 0600)			Comments			Calculate	8- 40 Ur	TWA		calculate	S hour	/ TWA	7			1100/1 6 21/5/18	000	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
3/64			Project #: OF-2500 -	NCA			Particulate: Total Nu	Res	Air Volume (L)	OR	Wipe Area (ft²)			3686	7000	366	1541	225C	34a L	45 c	112.5 6			Date/Time: 87	I	Date/Time:	Date/Time:	
Date: 8/13/c	, K	Sampler Name:	roject #: Of	V		L		Air Quality		dew	S 9	iocas Iide urfac urfac	S S															
ď	A	S		22-0915			Other Metals	(Specify metals below)	ə	AЯ mu	13R 19 F	CLP oxic M	T V										No	inolest	7			
	12	1517	•	Fax #: 807-222-091.		70	Lead	() 99;	94) 8) *	aint (I N S										ments? Yes	anny	X)		
	Delus	AK 445	H	Fax #:		-	1		ig) p	tfiel (M)	аа) (%)	FM (ir sint (- - - - - - - - - - - - - - - - - - -										E1792 require	Signature:	Signature:	Signature:	Signature:	
rtech	ateshore	ncharage	2-2641	·- 4250		Achochoc	Aspesto.		M. Count ount	y Pl ber it Ca	ii (nioc niste	EM V STW D STW E SOIK I					, 3	× ,					DO WIPE SAITIPLES SUBMITTED MEET AS I M E1/92 requirements?	dobl	JUCU J	^		
me: 1/6,	3105 6	p: Anc.	ccount #:	707-266-4250	-2550					Sample	Date &)	8/15/08	/)	0/2/20	0 100	1	\ +	-	1000	pies sabmitte	Amy Ran	Tiving.			
Company Name: Mortech	Address:	City, State, Zip:	EHS Client Account #: Z-Z641	Phone #: 7	P.O. #: OF-25CG					Sample	Number		87-32	82-35			CH 70	77 77	00 20	04'51	SS _ 10	* Octive of	Do wipe sam	Released by: Amy Rando C	Received by:	Released by:	Received by:	

ENVIRONMENTAL HAZARDS SERVICES, L.L.C. 7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907

Annotes. streta dunna 240 245 elapsco 869 90 50 So The. 5 Date/Time: 8/13/28 (€/600 O(0)Comments calculate Calcolate 8-hour TWA 8 Lov Particulate: Total Nuisance (NIOSH 0500) Y M Respirable (NIOSH 0600) Wipe Area (ft²) OR Air Volume (L) Project #: 08-2500 100 396 € 30 6 Date/Time: Area(cm² Date/Time: Date/Time: Scrape 612.5 125 900 S Bulk Sampler Name: Contact Name: Air Quality Surface Tape Indoor Surface Swab CHAIN OF CUSTODY FORM Date: Slide Biocassette Other Metals ž Fax #: 907-222-0915 Foxic Metal Profile omu∃ gnibleW TCLP RCRA 8 Yes Waste Water LCLP (Pb) (See Note) Do wipe samples submitted meet ASTM E1792 requirements? lioS Lead Caint (mg/cm²) Signature: Signature: Signature: Signature: (M99) Inisc Deluc Paint (%) TEM Chatfield (Bulk) Asbestos (Air) AABHA MBT Lateshore PLM Gravimetric EHS Client Account #: Z-264/ City, State, Zip: Anchorage Phone #: 907-266-4250 PLM Point Count 2002 L Randolol (PCM) Fiber Count Brilk ID PY PLM P.O. #. OF-250G Sample Date & 80/+/8 8/1/08 8/7/08 Time 8/7/08 8/7/08 8/7/08 8/7-108 Address: 3/05 Released by: 4muCompany Name: Received by: Released by: Number 82-56 Received by: Sample 62-5A 62-53 Bt-46 Bt-48 B2-57

7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907 **CHAIN OF CUSTODY FORM**

Commence Manage	11/	1	1	1				1	1	1		1	1	3	1	1 4		3	ا	1						
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EHS Client Account #: 2 - 2641	ount #:		7	3	17	T		1	4							֓֞֞֞֝֞֜֞֞֝֞֜֞֝֓֓֓֓֞֟֜֓֓֓֓֓֓֟֜֟֓֓֓֓֓֟֝֓֓֓֓֟֝֓֓֓֓֟֝֓֓֓֓֟֝֓֓֡֝֝	المانية	ž ;	Design #. Of	1	Desired Walles		b Coll	1		
Phone #: 907-266-4250	17-26		123	5	١ ١	-	4	Fax #:	;;;	507-222-0915	1	i,	S	Ö	315		a n	ŧ) \	600	204		Kiri omble	مهرور		
P.O. #: OS-250G	2500								1																	
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Sample	1) ~	by P	Tedi-		\A∃⊦		('				p) (gee		CRA	Fum	d IEI		ətte	Swal		Wipe	OR Wipe Area (ft²)		Comments		elapsed	
	Time	Bulk ID	(PCM)	PLM Po PLM Gr	IA MAT	TEM CI	Aiد Paint (%	A) mis의 9) friis의	Paint (m	lioS	<u>Wipe</u> [★]	Vaste V	я чээт	QuibleVA Toxic Me	Toxic Me		Siocass	Slide Surface	Surface	Snlk	OR Scrape				sample.	
82-47	8/7/08						-				-			1	-						480 1				240	
B5-40										-				\vdash	_		-			4	1	2	Calcolate		840	
B2-54							-	Ш	-					\vdash						4	40 L		8-40cr		90	
62-58	-		ᅴ			_											-			٦	100	1	TWA		So	
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7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907 CHAIN OF CUSTODY FORM

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City, State, Zip: Anchocose	Anci	200	9	4	1	A	ل	8	99.	12	4					San	nple	r Na	Sampler Name:					
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7469 WHITE PINE ROAD - RICHMOND, VA 23237 804-275-4788 FAX 804-275-4907

FIBER COUNT ANALYSIS SUMMARY

CLIENT:

Nortech

2400 College Road

Fairbanks, AK 99709-3754

DATE OF SAMPLING: $05\text{-}08~\mathrm{Aug}~2008$

DATE OF RECEIPT: 15 Aug 2008

DATE OF ANALYSIS: 15 Aug 2008

DATE OF REPORT: 16 Aug 2008

CLIENT NUMBER:

EHS PROJECT #: 200

1 1 1/1/2014

2008-08-0831

PROJECT:

08-2500-R&M Ambler; NCA

EHS SAMPLE#	CLIENT SAMPLE#	VOLUME LITERS(L)	FIBERS/FIELDS	FIBERS/CC
01	A-01	2450	4.0/100	< 0.005
02	A-02	2450	7.0/100	< 0.005
03	A-03	2250	5.0/100	<0.005
04	A-04	2200	0.0/100	<0.005
05	A-05	920	4.5/100	< 0.005
06	. A-06 ∪ A-06 UFR	1700	13.5/100	< 0.005
07	Å-107	900	5.0/100	< 0.005
08	A-08	949.2	3.0/100	< 0.005
09	A-09	760	9.0/100	0.006
10	A-10	720	3.5/100	< 0.005
11	A-11	2990	4.0/100	<0.005
12	A-12	2970	3.0/100	< 0.005
13	A-13	2950	2.0/100	< 0.005
14	A-14	766.5	2.5/100	< 0.005
15	, A .15	1020	4.0/100	< 0.005
16	A-16	1020	4.0/100	<0.005
17	A-17	850	3.0/100	< 0.005
18	A-18	850	2.0/100	< 0.005
19	A-19	1150	1.0/100	< 0.005

CLIENT NUMBER:

2008-08-0831

EHS PROJECT #: PROJECT:

08-2500-R&M Ambler; NCA

EHS SAMPLE#	CLIENT SAMPLE#	VOLUME LITERS(L)	FIBERS/FIELDS	FIBERS/CC
20	A-20	1150	4.5/100	< 0.005
21	A-21	1150	0.0/100	< 0.005
22	A-22	1150	1.0/100	< 0.005
23	A-23	740	2.0/100	< 0.005
24	A-24	740	4.0/100	< 0.005
	* A*-25	750	3.0/100	<0.005
	EGM40 TO A-26	750	1.0/100	<0.005
27	A-27	3000	12.5/100	< 0.005
28	A-28	3000	9.0/100	< 0.005
29	A-29	2460	15.0/100	< 0.005
30	Á-30	2200	6.5/100	< 0.005
31	A-31	2420	8.0/100	< 0.005
32	A-32	2420	2.0/100	< 0.005
33	A-33	1550	1.0/100	< 0.005
34	A34	1550	2.0/100	< 0.005
35	A-35	2200	4.5/100	< 0.005
36	A-36	2200	4.0/100	< 0.005

METHOD:

NIOSH 7400, Issue 2, 08/15/94

ANALYST:

Mark Case

Reviewed By Authorized Signatory:

Howard Varner, General Manager

Irma Faszewski, Quality Assurance Coordinator

CLIENT NUMBER: EHS PROJECT #:

2008-08-0831

PROJECT:

08-2500-R&M Ambler; NCA

Interlaboratory Sr for fiber count ranges 5-20, 20-50, and >50 respectively are 0.136, 0.118, 0.111. Intralaboratory Sr for fiber count ranges 5-20, 20-50, and >50 respectively are 0.179, 0.108, 0.052 for Mark Case; 0.189, 0.108, 0.050 for Kathy Sizemore; and 0.175, 0.105, 0.050 for all other analysts.

NOTE: The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. The submission of blank samples is required by sampling methodologies. EHS sample results (fibers/cc) are blank corrected, per NIOSH 7400, when the client submits blank samples. If the report does not contain the result for a field blank, it is due to the fact that the client did not include a field blank with their samples. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full without the written consent of Environmental Hazards Services, L.L.C. California Certification #2319 NY ELAP #11714

Method Level of Detection: Estimated at 7 fibers/mm².

LEGEND

L = liters

fibers/mm2 = fibers per square millimeter

fibers/cc = fibers per cubic centimeter pcm3.dot/05AUG2008/REV3/ MR

-- PAGE 03 of 03 -- END OF REPORT --

a Samili Pállar Hállar

36 pcm

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.
EHS 2008-08-0831 vine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907 CHAIN OF CUSTODY FORM

Company Name: Nortech	3: 1/c	1	1	7				l									7	Date:	1.		F	12	8/13/68		,
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City, State, Zip:	Anchoray	12/2	g	4	1	A	Y		6	1566	>	W					, 	Sampler Name:	ple	r N.	ame	7			ļ
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Phone #: 907-266-4250	7-26		2	6	l			Fa.	# *	Fax#: 807-222-0913	Q	M	N	22	9	16.	t_I			1	1	3	CA		
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ENVIRONMENTAL HAZARDS SERVICES, L.L.C. 7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907

Comments Particulate: Total Nuisance (NIOSH 0500) Respirable (NIOSH 0600) 8/13/08 @ Air Volume (L) 76056 Wipe Area (ft²) 2950 L Project #: 08-2500 7058 1080 1150L 11506 7 080 Area(cm²) Scrape 39701 Date/Time: Date/Time: Date/Time: 3990 Date/Time: 850 Sampler Name: Contact Name: Bulk Air Quality Indoor Surface Tape Surface Swab CHAIN OF CUSTODY FORM Date: Slide Biocassette Other Metals ဍ Fax#: 807-222-091. oxic Metal Profile emu Penible Fume TCLP RCRA 8 Yes Waste Water (PA) (See Note) Do wipe samples submitted meet ASTM E1792 requirements? Lead Signature: Signature: Signature: Signature: (M99) Inis9 Deluc (%) triis9 TEM Chatfield (Bulk) EHS Client Account #: 2-2641-7 Asbestos (TEM ARERA (Air) Lateshore PLM Gravimetric City, State, Zip: Anchorage Phone #: 907-266-4250 PLM Point Count MCC 7515 Released by: Amy Randolol (PCM) Fiber Count Bulk ID by PLM P.O. #: OF-2500 Sample Date & 80/5/8 8/2/08 8/5/08 3/10/08 8/6/08 8/19/08 8/0/9/8 8/6/08 8019/8 8/10/08 Time Address: 3/05 Company Name: Received by: Released by: Sample Received by: Number サーエ A-17 A-20 A-18 A-15 A-12 A-16 A-19 A-13

ENVIRONMENTAL HAZARDS SERVICES, L.L.C. 7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907 **CHAIN OF CUSTODY FORM**

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City, State, Zip: Anchorage	" Anc	100	9	4	1	A			41566	5	Ñ					S	am	Sampler Name:	Nar	ne:				
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ENVIRONMENTAL HAZARDS SERVICES, L.L.C. 7469 Whitepine Road Richmond, Virginia 23237 Phone (804) 275-4788 Fax (804) 275-4907 CHAIN OF CUSTODY FORM

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